

# **ANALYSIS OF THE 2004 CALIFORNIA COMMERCIAL PORTABLE FUEL CONTAINER SURVEY**

Prepared for the California Air Resources Board  
by the Institute for Social Research at  
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January 2005



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## Section 1: Methodology

Table 1.1 Survey Response Rates by Industry Category

| Industry Category <sup>a</sup>          | Percent            |                   |         |       | Number of cases    |                   |         |       |
|---|--------------------|-------------------|---------|-------|--------------------|-------------------|---------|-------|
|   | Complete interview | Partial interview | Refusal | Total | Complete Interview | Partial interview | Refusal | Total |
| Crop production                         | 69%                | 4%                | 27%     | 100%  | 78                 | 4                 | 31      | 113   |
| Animal production                       | 71%                | 0%                | 29%     | 100%  | 51                 | 0                 | 21      | 72    |
| Forestry and logging                    | 93%                | 0%                | 7%      | 100%  | 25                 | 0                 | 2       | 27    |
| Construction                            | 79%                | 2%                | 20%     | 100%  | 206                | 4                 | 52      | 262   |
| Retail                                  | 91%                | 0%                | 9%      | 100%  | 50                 | 0                 | 5       | 55    |
| Motor vehicle towing                    | 59%                | 5%                | 35%     | 100%  | 54                 | 5                 | 32      | 91    |
| Exterminating and pest control services | 83%                | 6%                | 11%     | 100%  | 15                 | 1                 | 2       | 18    |
| Landscaping services                    | 63%                | 5%                | 33%     | 100%  | 105                | 8                 | 55      | 168   |
| Educational services                    | 77%                | 4%                | 19%     | 100%  | 63                 | 3                 | 15      | 81    |
| Sports and recreation                   | 73%                | 1%                | 26%     | 100%  | 51                 | 1                 | 18      | 70    |
| Accommodation                           | 72%                | 1%                | 26%     | 100%  | 48                 | 1                 | 18      | 67    |
| Repair and maintenance services         | 71%                | 3%                | 26%     | 100%  | 102                | 5                 | 37      | 144   |
| Cemeteries and crematories              | 66%                | 0%                | 34%     | 100%  | 27                 | 0                 | 14      | 41    |
| Total                                   | 72%                | 3%                | 25%     | 100%  | 875                | 32                | 302     | 1,209 |

<sup>a</sup> See Table 1.2 for a detailed description of the 6-digit industry North American Industrial Classification System (NAICS) codes included in each category. In order to describe the ownership and use patterns for each industry category, the sample was stratified and quotas were set for the number of interviews to be completed in each category.

Table 1.2 Description of North American Industrial Classification (NAICS) Codes and Categories Used for Sample Stratification

| Industry Category                       | 6-digit Industry Code | Description                                       | California Businesses <sup>a</sup> |         | Businesses Interviewed |         |
|---|-----------------------|---|------------------------------------|---------|------------------------|---------|
|   |                       |   | Number                             | Percent | Number                 | Percent |
| Crop production                         | 111310                | Orange groves                                     | 255                                | .3%     | 2                      | .2%     |
|   | 111320                | Citrus (except orange) groves                     | 339                                | .4%     | 5                      | .6%     |
|   | 111331                | Apple orchards                                    | 174                                | .2%     | 5                      | .6%     |
|   | 111332                | Grape vineyards                                   | 1,912                              | 2.3%    | 27                     | 3.1%    |
|   | 111335                | Tree nut farming                                  | 1,616                              | 2.0%    | 14                     | 1.6%    |
|   | 111336                | Fruit and tree nut combination farming            | 12                                 | .0%     | 0                      | --      |
|   | 111339                | Other non-citrus fruit farming                    | 1,037                              | 1.3%    | 8                      | .9%     |
|   | 111421                | Nursery and tree production                       | 594                                | .7%     | 8                      | .9%     |
| Animal production                       | 111422                | Floriculture production                           | 513                                | .6%     | 9                      | 1.0%    |
|   | 112111                | Beef cattle ranching and farming                  | 804                                | 1.0%    | 12                     | 1.4%    |
|   | 112112                | Cattle feedlots                                   | 267                                | .3%     | 11                     | 1.3%    |
|   | 112120                | Dairy cattle and milk production                  | 1,114                              | 1.4%    | 15                     | 1.7%    |
|   | 112210                | Hog and pig farming                               | 34                                 | .0%     | 0                      | --      |
|   | 112310                | Chicken egg production                            | 64                                 | .1%     | 4                      | .5%     |
|   | 112320                | Broilers and other meat type chicken production   | 17                                 | .0%     | 1                      | .1%     |
|   | 112330                | Turkey production                                 | 43                                 | .1%     | 0                      | --      |
|   | 112340                | Poultry hatcheries                                | 28                                 | .0%     | 1                      | .1%     |
|   | 112390                | Other poultry production                          | 32                                 | .0%     | 0                      | --      |
|   | 112410                | Sheep farming                                     | 86                                 | .1%     | 4                      | .5%     |
|   | 112420                | Goat farming                                      | 27                                 | .0%     | 0                      | --      |
|   | 112511                | Finfish farming and fish hatcheries               | 83                                 | .1%     | 3                      | .3%     |
|   | 112512                | Shellfish farming                                 | 4                                  | .0%     | 0                      | --      |
|   | 112519                | Other animal aquaculture                          | 16                                 | .0%     | 0                      | --      |
| Forestry and logging                    | 113110                | Timber tract operations                           | 26                                 | .0%     | 2                      | .2%     |
|   | 113210                | Forest nurseries and gathering forest products    | 26                                 | .0%     | 3                      | .3%     |
|   | 113310                | Logging   | 296                                | .4%     | 20                     | 2.3%    |
| Construction                            | 236115                | New single-family housing construction            | 18,970                             | 23.2%   | 143                    | 16.3%   |
|   | 236116                | New multifamily housing construction              | 159                                | .2%     | 0                      | --      |
|   | 236117                | New housing operative builders                    | 572                                | .7%     | 7                      | .8%     |
|   | 236118                | Residential remodelers                            | 5,273                              | 6.4%    | 56                     | 6.4%    |
| Retail                                  | 444210                | Outdoor power equipment stores                    | 253                                | .3%     | 14                     | 1.6%    |
|   | 444220                | Nursery and garden centers                        | 1,369                              | 1.7%    | 36                     | 4.1%    |
| Motor vehicle towing                    | 488410                | Motor vehicle towing                              | 1,886                              | 2.3%    | 54                     | 6.2%    |
| Exterminating and pest control services | 561710                | Exterminating and pest control services           | 2,064                              | 2.5%    | 15                     | 1.7%    |
| Landscaping services                    | 561730                | Landscaping services                              | 7,826                              | 9.6%    | 105                    | 12.0%   |
| Educational services                    | 611110                | Elementary and secondary schools                  | 11,573                             | 14.1%   | 54                     | 6.2%    |
|   | 611210                | Junior colleges                                   | 246                                | .3%     | 0                      | --      |
|   | 611310                | Colleges, universities and professional schools   | 1,358                              | 1.7%    | 7                      | .8%     |
|   | 611513                | Apprenticeship training                           | 26                                 | .0%     | 0                      | --      |
|   | 611519                | Other technical and trade schools                 | 774                                | .9%     | 2                      | .2%     |
| Sports and recreation                   | 711211                | Sports teams and clubs                            | 204                                | .2%     | 3                      | .3%     |
|   | 711212                | Racetracks  | 169                                | .2%     | 9                      | 1.0%    |
|   | 712130                | Zoos and botanical gardens                        | 102                                | .1%     | 1                      | .1%     |
|   | 712190                | Nature parks and other similar institutions       | 36                                 | .0%     | 0                      | --      |
|   | 713110                | Amusement and theme parks                         | 590                                | .7%     | 10                     | 1.1%    |
|   | 713910                | Golf courses and country clubs                    | 856                                | 1.0%    | 13                     | 1.5%    |
|   | 713930                | Marinas   | 447                                | .5%     | 15                     | 1.7%    |
| Accommodation                           | 721191                | Bed and breakfast inns                            | 791                                | 1.0%    | 18                     | 2.1%    |
|   | 721211                | RV parks and campgrounds                          | 238                                | .3%     | 3                      | .3%     |
|   | 721214                | Recreational, vacation camps (except campgrounds) | 985                                | 1.2%    | 27                     | 3.1%    |
| Repair and maintenance services         | 811111                | General automotive repair                         | 14,413                             | 17.6%   | 98                     | 11.2%   |
|   | 811411                | Home and garden equipment repair and maintenance  | 631                                | .8%     | 4                      | .5%     |
| Cemeteries and crematories              | 812220                | Cemeteries and crematories                        | 697                                | .9%     | 27                     | 3.1%    |
| Total                                   |                       |   | 81,927                             | 100.0%  | 875                    | 100.0%  |

<sup>a</sup> Source: January 2005 Dun & Bradstreet business database. The industries which might be expected to use portable fuel containers were selected by staff from the California Air Resources Board and the CSUS Institute for Social Research. Use of portable fuel containers by city, county, state and federal agencies has not been included in the survey.

Table 1.3 County Distribution for California Businesses and Businesses Interviewed

| County          | California Businesses <sup>a</sup> |         | Businesses Interviewed |         |
|-----------------|------------------------------------|---------|------------------------|---------|
|                 | Number                             | Percent | Number                 | Percent |
| Alameda         | 3,071                              | 3.7%    | 31                     | 3.5%    |
| Alpine          | 9                                  | .0%     | 0                      | --      |
| Amador          | 193                                | .2%     | 1                      | .1%     |
| Butte           | 969                                | 1.2%    | 9                      | 1.0%    |
| Calaveras       | 236                                | .3%     | 2                      | .2%     |
| Colusa          | 117                                | .1%     | 2                      | .2%     |
| Contra Costa    | 2,277                              | 2.8%    | 25                     | 2.9%    |
| Del Norte       | 114                                | .1%     | 1                      | .1%     |
| El Dorado       | 813                                | 1.0%    | 12                     | 1.4%    |
| Fresno          | 2,751                              | 3.4%    | 26                     | 3.0%    |
| Glenn           | 213                                | .3%     | 2                      | .2%     |
| Humboldt        | 585                                | .7%     | 11                     | 1.3%    |
| Imperial        | 264                                | .3%     | 7                      | .8%     |
| Inyo            | 88                                 | .1%     | 1                      | .1%     |
| Kern            | 1,671                              | 2.0%    | 21                     | 2.4%    |
| Kings           | 323                                | .4%     | 6                      | .7%     |
| Lake            | 290                                | .4%     | 4                      | .5%     |
| Lassen          | 125                                | .2%     | 0                      | --      |
| Los Angeles     | 15,461                             | 18.9%   | 132                    | 15.1%   |
| Madera          | 510                                | .6%     | 5                      | .6%     |
| Marin           | 1,095                              | 1.3%    | 14                     | 1.6%    |
| Mariposa        | 93                                 | .1%     | 0                      | --      |
| Mendocino       | 601                                | .7%     | 6                      | .7%     |
| Merced          | 830                                | 1.0%    | 17                     | 1.9%    |
| Modoc           | 57                                 | .1%     | 3                      | .3%     |
| Mono            | 87                                 | .1%     | 0                      | --      |
| Monterey        | 1,049                              | 1.3%    | 10                     | 1.1%    |
| Napa            | 753                                | .9%     | 10                     | 1.1%    |
| Nevada          | 611                                | .7%     | 5                      | .6%     |
| Orange          | 5,963                              | 7.3%    | 67                     | 7.7%    |
| Placer          | 1,022                              | 1.2%    | 8                      | .9%     |
| Plumas          | 137                                | .2%     | 2                      | .2%     |
| Riverside       | 3,787                              | 4.6%    | 51                     | 5.8%    |
| Sacramento      | 2,748                              | 3.4%    | 15                     | 1.7%    |
| San Benito      | 174                                | .2%     | 2                      | .2%     |
| San Bernardino  | 3,536                              | 4.3%    | 30                     | 3.4%    |
| San Diego       | 6,235                              | 7.6%    | 78                     | 8.9%    |
| San Francisco   | 1,368                              | 1.7%    | 9                      | 1.0%    |
| San Joaquin     | 1,710                              | 2.1%    | 19                     | 2.2%    |
| San Luis Obispo | 1,207                              | 1.5%    | 10                     | 1.1%    |
| San Mateo       | 1,859                              | 2.3%    | 21                     | 2.4%    |
| Santa Barbara   | 1,244                              | 1.5%    | 9                      | 1.0%    |
| Santa Clara     | 3,481                              | 4.2%    | 48                     | 5.5%    |
| Santa Cruz      | 1,075                              | 1.3%    | 8                      | .9%     |
| Shasta          | 754                                | .9%     | 14                     | 1.6%    |
| Sierra          | 22                                 | .0%     | 0                      | --      |
| Siskiyou        | 293                                | .4%     | 7                      | .8%     |
| Solano          | 807                                | 1.0%    | 10                     | 1.1%    |
| Sonoma          | 2,081                              | 2.5%    | 29                     | 3.3%    |
| Stanislaus      | 1,826                              | 2.2%    | 23                     | 2.6%    |
| Sutter          | 393                                | .5%     | 3                      | .3%     |
| Tehama          | 320                                | .4%     | 3                      | .3%     |
| Trinity         | 69                                 | .1%     | 3                      | .3%     |
| Tulare          | 1,489                              | 1.8%    | 12                     | 1.4%    |
| Tuolumne        | 307                                | .4%     | 2                      | .2%     |
| Ventura         | 1,987                              | 2.4%    | 25                     | 2.9%    |
| Yolo            | 594                                | .7%     | 3                      | .3%     |
| Yuba            | 183                                | .2%     | 1                      | .1%     |
| Total           | 81,927                             | 100.0%  | 875                    | 100.0%  |

<sup>a</sup> Source: January 2005 Dun & Bradstreet business database for 53 selected NAICS codes.





Table 1.4 Computation of Weights to Adjust for Stratification by Industry Category

| Industry Category                       | California Businesses <sup>a</sup> |         | Businesses Interviewed |         | Difference <sup>b</sup> | Weight | New weighted number |
|---|------------------------------------|---------|------------------------|---------|-------------------------|--------|---------------------|
|   | Number                             | Percent | Number                 | Percent |                         |        |                     |
| Crop production                         | 6,452                              | 8%      | 78                     | 9%      | 1%                      | .8834  | 68.91               |
| Animal production                       | 2,619                              | 3%      | 51                     | 6%      | 3%                      | .5485  | 27.97               |
| Forestry and logging                    | 348                                | 0%      | 25                     | 3%      | 2%                      | .1487  | 3.72                |
| Construction                            | 24,974                             | 30%     | 206                    | 24%     | -7%                     | 1.2948 | 266.73              |
| Retail                                  | 1,622                              | 2%      | 50                     | 6%      | 4%                      | .3465  | 17.33               |
| Motor vehicle towing                    | 1,886                              | 2%      | 54                     | 6%      | 4%                      | .3730  | 20.14               |
| Exterminating and pest control services | 2,064                              | 3%      | 15                     | 2%      | -1%                     | 1.4696 | 22.04               |
| Landscaping services                    | 7,826                              | 10%     | 105                    | 12%     | 2%                      | .7960  | 83.58               |
| Educational services                    | 13,977                             | 17%     | 63                     | 7%      | -10%                    | 2.3695 | 149.28              |
| Sports and recreation                   | 2,404                              | 3%      | 51                     | 6%      | 3%                      | .5034  | 25.67               |
| Accommodation                           | 2,014                              | 2%      | 48                     | 5%      | 3%                      | .4481  | 21.51               |
| Repair and maintenance services         | 15,044                             | 18%     | 102                    | 12%     | -7%                     | 1.5752 | 160.67              |
| Cemeteries and crematories              | 697                                | 1%      | 27                     | 3%      | 2%                      | .2757  | 7.44                |
| Total                                   | 81,927                             | 100%    | 875                    | 100%    |                         |        | 874.99              |

<sup>a</sup> Source: January 2005 Dun & Bradstreet business database for 53 selected NAICS codes.

<sup>b</sup> Difference between percent distribution for businesses interviewed and statewide distribution.

Table 1.5 Computation of Weights to Adjust for the Number of Businesses by Region  
[South Coast Air Quality District (AQD) and Remainder of State]

| Region             |                | California Businesses <sup>a</sup> |         | Businesses Interviewed <sup>b</sup> |         | Difference <sup>c</sup> | Weight | New weighted number |
|--------------------|----------------|------------------------------------|---------|-------------------------------------|---------|-------------------------|--------|---------------------|
|                    |                | Number                             | Percent | Number                              | Percent |                         |        |                     |
| South Coast AQD    | Los Angeles    | 15,461                             | 18.9%   | 153.15                              | 17.5%   | -1.4%                   | 1.0782 | 165.13              |
|                    | Orange         | 5,963                              | 7.3%    | 76                                  | 8.7%    | 1.4%                    | .8380  | 63.69               |
|                    | Riverside      | 3,787                              | 4.6%    | 56.47                               | 6.5%    | 1.8%                    | .7162  | 40.45               |
|                    | San Bernardino | 3,536                              | 4.3%    | 33.02                               | 3.8%    | -.5%                    | 1.1437 | 37.77               |
| Remainder of state |                | 53,180                             | 64.9%   | 556.36                              | 63.6%   | -1.3%                   | 1.0209 | 567.98              |
| Total              |                | 81,927                             | 100.0%  | 875                                 | 100.0%  |                         |        | 875.00              |

<sup>a</sup> Source: January 2005 Dun & Bradstreet business database for 53 selected NAICS codes.

<sup>b</sup> The number of businesses interviewed shown here is weighted (as described in Table 1.4) to adjust for stratification by industry category. These numbers are different than those shown in Table 1.3, which shows the unweighted number of businesses interviewed in each county.

<sup>c</sup> Difference between percent distribution for businesses interviewed and statewide distribution.

## Section 2: Summary of Survey Responses<sup>1</sup>

Table 2.1 Percent of Businesses Owning Portable Fuel Containers

|                         | Percent |       |        | Number of cases |     |       |
|-------------------------|---------|-------|--------|-----------------|-----|-------|
|                         | Yes     | No    | Total  | Yes             | No  | Total |
| Spill-proof red plastic | 39.4%   | 60.6% | 100.0% | 344             | 530 | 874   |
| Blue plastic            | 2.3%    | 97.7% | 100.0% | 20              | 846 | 866   |
| 5-gallon plastic jug    | 3.9%    | 96.0% | 99.9%  | 34              | 831 | 866   |
| Metal                   | 20.7%   | 79.4% | 100.1% | 179             | 686 | 864   |
| All types <sup>2</sup>  | 53.4%   | 46.6% | 100.0% | 467             | 408 | 875   |

Table 2.2 Mean Number of Containers per Business

|   |                         | All businesses |                 | Only businesses who own that type of PFC |                 |
|---|-------------------------|----------------|-----------------|--|-----------------|
|   |                         | Mean           | Number of cases | Mean                                     | Number of cases |
| All PFCs  | Spill-proof red plastic | 1.32           | 874             | 3.36                                     | 344             |
|   | Blue plastic            | .05            | 866             | 2.37                                     | 20              |
|   | 5-gallon plastic jug    | .14            | 866             | 3.56                                     | 34              |
|   | Metal                   | 1.22           | 864             | 5.91                                     | 179             |
|   | All types               | 2.73           | 864             | 5.16                                     | 457             |
| PFCs used for gas or 2-stroke fuel <sup>3</sup> | Spill-proof red plastic | 1.32           | 874             | 3.36                                     | 344             |
|   | Blue plastic            | .04            | 866             | 2.63                                     | 12              |
|   | 5-gallon plastic jug    | .11            | 866             | 4.08                                     | 23              |
|   | Metal                   | 1.22           | 864             | 5.91                                     | 179             |
|   | All types               | 2.67           | 864             | 5.08                                     | 454             |

Table 2.3 Mean Container Capacity

|                                   | Mean | Number of cases |
|-----------------------------------|------|-----------------|
| Spill-proof red plastic           | 3.43 | 344             |
| Blue plastic                      | 3.97 | 12              |
| 5-gallon plastic jug <sup>4</sup> | 5.00 | 23              |
| Metal                             | 3.93 | 176             |
| All types                         | 3.63 | 464             |

<sup>1</sup> All tables in the remainder of this report summarize data weighted to adjust for stratification by industry category and region. The weighting process produces fractions of cases. Due to rounding, the number of cases may not sum exactly to the total.

<sup>2</sup> Throughout this report, the term "all types of portable fuel containers" is used to refer to all types of portable fuel containers *for which current survey information was collected*. For example, the survey did not ask about the number of older red plastic containers *without* spill-proof spouts. It should also be noted that the survey, including the introduction, specifically asked about "gas cans" and therefore it is likely that some businesses using fuel containers only for diesel were not counted.

<sup>3</sup> Respondents reporting ownership of blue plastic gasoline/kerosene cans or 5-gallon plastic jugs were asked how many containers were used for gasoline or two-stroke fuel. Eight of the twenty businesses (40%) that own blue cans do not use them for gasoline. Eleven of the thirty-four businesses (32%) that own 5-gallon plastic jugs do not use them gasoline or 2-stroke fuel. It is assumed that spill-proof red plastic and metal gas cans are used only for gasoline or two-stroke fuel. Capacity and refill information was collected only for containers used for gasoline or 2-stroke fuel.

<sup>4</sup> Although all of these containers are by definition 5-gallon containers, they are included in tables describing capacity to show their contribution to overall container capacity.

Table 2.4 Percent Distribution of Container Capacity

|                         | Percent  |          |          |        | <i>Number of cases</i> |
|-------------------------|----------|----------|----------|--------|------------------------|
|                         | 1-gallon | 2-gallon | 5-gallon | Total  |                        |
| Spill-proof red plastic | 14.2%    | 36.5%    | 49.2%    | 100.0% | 344                    |
| Blue plastic            | 25.7%    | .0%      | 74.3%    | 100.0% | 12                     |
| 5-gallon plastic jug    | --       | --       | 100.0%   | 100.0% | 23                     |
| Metal                   | 9.8%     | 24.7%    | 65.4%    | 100.0% | 176                    |
| All types               | 12.3%    | 31.7%    | 55.9%    | 100.0% | 464                    |

Table 2.5. Mean Number of Refills per Container per Day

|                         | Mean | <i>Number of cases</i> |
|-------------------------|------|------------------------|
| Spill-proof red plastic | .16  | 335                    |
| Blue plastic            | .16  | 12                     |
| 5-gallon plastic jug    | .45  | 21                     |
| Metal                   | .15  | 174                    |
| All types               | .16  | 450                    |

Table 2.6. Frequency of Container Use<sup>a</sup>

|                               | Percent | <i>Number of cases</i> |
|-------------------------------|---------|------------------------|
| Daily, about 5-7 times a week | 23.3%   | 83                     |
| Several (2-4) times a week    | 19.9%   | 71                     |
| About once a week             | 6.1%    | 22                     |
| Several (2-3) times a month   | 16.6%   | 60                     |
| About once a month            | 14.7%   | 53                     |
| Less than once a month        | 19.4%   | 69                     |
| Total                         | 100.0%  | 358                    |

<sup>a</sup> This question asked: So far we've been talking about how many times you refill these containers. Now I need to find out how frequently you use them.

Table 2.7 Responses to Questions Regarding Problems with New Spouts

|  |                      | Percent | <i>Number<br/>of cases</i> |
|--|----------------------|---------|----------------------------|
| Have you or your co-workers experienced any problems filling equipment using the new spouts?         | Yes                  | 16.4%   | 56                         |
|  | No                   | 83.6%   | 286                        |
|  | Total                | 100.0%  | 342                        |
| Have you (or your co-workers) had any problems with spillage?  | Yes                  | 16.7%   | 57                         |
|  | No                   | 83.3%   | 285                        |
|  | Total                | 100.0%  | 342                        |
| Have you (or your co-workers) ever had any problems with the container or the spout breaking?        | Yes, spout broke     | 3.9%    | 13                         |
|  | Yes, container broke | 3.6%    | 12                         |
|  | No, no breakage      | 92.6%   | 311                        |
|  | Total                | 100.0%  | 336                        |
| Have you (or your co-workers) ever had to modify the container to make it work to your satisfaction? | Yes                  | 9.2%    | 31                         |
|  | No                   | 90.8%   | 305                        |
|  | Total                | 100.0%  | 336                        |

Table 2.8 Summary of Types of Comments about Spill-Proof Red Plastic Containers<sup>a</sup>

|   |   | Percent | <i>Number<br/>of cases</i> |
|---|---|---------|----------------------------|
| Are there any comments you would like to make about the new red plastic gas cans? | No problems with containers                         | 19.9%   | 67                         |
|   | Identified one or more problems with the containers | 20.2%   | 68                         |
|   | No comment  | 59.8%   | 201                        |
|   | Total   | 100.0%  | 336                        |

<sup>a</sup> This was an open-ended question. The summary presented here is based on a review of responses for those who reported ownership and use of the new containers.

Table 2.9 Detail on Comments about Spill-Proof Red Plastic Containers

|                     |                                  | <i>Number<br/>of cases</i> |
|---------------------|----------------------------------|----------------------------|
| Positive comments   | Good                             | 9                          |
|                     | Improved                         | 1                          |
|                     | Easy to handle                   | 6                          |
| Problems identified | Difficult to use                 | 56                         |
|                     | Problems with spout              | 18                         |
|                     | Too slow                         | 13                         |
|                     | Spills                           | 6                          |
|                     | Breaks                           | 4                          |
|                     | Problems in heat                 | 2                          |
|                     | Expensive                        | 3                          |
|                     | Doesn't work with some equipment | 3                          |
|                     | Leaks                            | 2                          |

### Section 3: Summary of Survey Responses by Industry Category

Table 3.1 Percent of Businesses Owning Portable Fuel Containers by Industry Category<sup>5</sup>

|   | Percent of businesses who own PFC: |              |                      |       |          | <i>Number of cases</i> |
|---|------------------------------------|--------------|----------------------|-------|----------|------------------------|
|   | Spill-proof red plastic            | Blue plastic | 5-gallon plastic jug | Metal | Any type |                        |
| Crop production                         | 31.4%                              | 4.3%         | 10.0%                | 33.3% | 52.2%    | 69-70                  |
| Animal production                       | 46.4%                              | .0%          | 3.7%                 | 14.8% | 57.1%    | 27-28                  |
| Forestry and logging                    | 50.0%                              | .0%          | .0%                  | 25.0% | 50.0%    | 3-4                    |
| Construction                            | 37.9%                              | 2.3%         | 3.9%                 | 5.8%  | 39.4%    | 258-264                |
| Retail                                  | 47.1%                              | 5.6%         | 5.6%                 | 5.9%  | 52.9%    | 17-18                  |
| Towing                                  | 70.0%                              | 10.5%        | 5.3%                 | 31.6% | 85.0%    | 19-20                  |
| Exterminating and pest control services | .0%                                | .0%          | .0%                  | .0%   | .0%      | 22                     |
| Landscaping                             | 53.0%                              | 6.0%         | 4.8%                 | 15.7% | 63.1%    | 83-84                  |
| Educational services                    | 31.3%                              | .0%          | 2.0%                 | 45.0% | 68.0%    | 148-150                |
| Sports and recreation                   | 36.0%                              | 4.0%         | 11.5%                | 28.0% | 52.0%    | 25-26                  |
| Accommodation                           | 42.9%                              | .0%          | 4.5%                 | 22.7% | 54.5%    | 21-22                  |
| Repair and maintenance services         | 45.3%                              | 1.3%         | 3.1%                 | 21.9% | 61.3%    | 160-161                |
| Cemeteries and crematories              | 37.5%                              | .0%          | .0%                  | 28.6% | 57.1%    | 7-8                    |
| Total                                   | 39.4%                              | 2.3%         | 3.9%                 | 20.7% | 53.4%    | 862-873                |

<sup>5</sup> Follow-up phone calls were made to a sample of businesses indicating that they do not own or use portable fuel containers (PFCs). Many businesses in four categories (education, sports and recreation, accommodation, and cemeteries and crematories) contract out their landscape maintenance services. Other businesses, including those in the construction and landscaping services category, have their own fuel tanks on-site. Other businesses in the landscaping category provide a variety of services that do not require small gasoline powered engines. Examples include street sweeping, hydroseeding, sod laying/turf installation, plant and shrub maintenance in buildings and tropical plant maintenance services. Within another category in which close to 100% use was expected – towing services -- we found that only towing services that have contracts with police or auto clubs are required to carry PFCs on their trucks. So a number of towing services only do transports and tire changes. Others only tow wrecks, do repossessions, or just tow big rigs.

Table 3.2 Mean Number of Containers per Business by Industry Category<sup>a</sup>

|                 |   | All businesses          |              |                      |       |           | Only businesses who own that type of PFC |              |                      |       |           |
|-----------------|---|-------------------------|--------------|----------------------|-------|-----------|--|--------------|----------------------|-------|-----------|
|                 |   | Spill-proof red plastic | Blue plastic | 5-gallon plastic jug | Metal | All types | Spill-proof red plastic                  | Blue plastic | 5-gallon plastic jug | Metal | All types |
| Mean            | Crop production                         | .67                     | .07          | .10                  | .60   | 1.43      | 2.16                                     | 1.50         | 2.00                 | 1.79  | 2.74      |
|                 | Animal production                       | 1.32                    | .00          | .03                  | .27   | 1.60      | 2.86                                     | --           | 1.00                 | 2.00  | 2.88      |
|                 | Forestry and logging                    | 1.56                    | .00          | .00                  | .16   | 1.73      | 3.80                                     | --           | --                   | 1.00  | 3.50      |
|                 | Construction                            | 1.12                    | .00          | .12                  | .10   | 1.32      | 2.96                                     | --           | 8.00                 | 1.63  | 3.39      |
|                 | Retail                                  | 2.57                    | .07          | .21                  | .46   | 3.32      | 5.57                                     | 2.00         | 6.00                 | 6.50  | 6.23      |
|                 | Towing                                  | 5.59                    | .45          | .02                  | 2.52  | 8.68      | 7.97                                     | 7.31         | 1.00                 | 8.54  | 9.96      |
|                 | Exterminating and pest control services | .00                     | .00          | .00                  | .00   | .00       | --                                       | --           | --                   | --    | --        |
|                 | Landscaping                             | 1.93                    | .04          | .08                  | .29   | 2.34      | 3.64                                     | 1.00         | 3.00                 | 1.87  | 3.74      |
|                 | Educational services                    | 1.34                    | .00          | .11                  | 5.17  | 6.62      | 4.23                                     | --           | 5.00                 | 11.48 | 9.66      |
|                 | Sports and recreation                   | 2.77                    | .25          | .85                  | 1.04  | 4.91      | 7.49                                     | 6.00         | 7.31                 | 3.54  | 9.45      |
|                 | Accommodation                           | 1.26                    | .00          | .07                  | .81   | 2.11      | 2.94                                     | --           | 2.00                 | 3.84  | 3.78      |
|                 | Repair and maintenance services         | .93                     | .04          | .03                  | .50   | 1.43      | 2.05                                     | 3.00         | 1.00                 | 2.28  | 2.39      |
|                 | Cemeteries and crematories              | .64                     | .00          | .00                  | 1.42  | 2.06      | 1.69                                     | --           | --                   | 4.70  | 3.76      |
|                 | Total                                   | 1.32                    | .04          | .11                  | 1.22  | 2.67      | 3.36                                     | 2.63         | 4.08                 | 5.91  | 5.02      |
| Number of cases | Crop production                         | 70                      | 70           | 70                   | 70    | 70        | 22                                       | 3            | 3                    | 23    | 36        |
|                 | Animal production                       | 28                      | 27           | 27                   | 27    | 27        | 13                                       | --           | 1                    | 4     | 16        |
|                 | Forestry and logging                    | 4                       | 4            | 4                    | 4     | 4         | 2  | --           | --                   | 1     | 2         |
|                 | Construction                            | 265                     | 259          | 259                  | 259   | 259       | 100                                      | --           | 4                    | 15    | 104       |
|                 | Retail                                  | 18                      | 18           | 18                   | 18    | 18        | 8  | 1            | 1                    | 1     | 9         |
|                 | Towing                                  | 20                      | 19           | 19                   | 19    | 19        | 14                                       | 1            | 0                    | 6     | 17        |
|                 | Exterminating and pest control services | 22                      | 22           | 22                   | 22    | 22        | --                                       | --           | --                   | --    | --        |
|                 | Landscaping                             | 84                      | 84           | 84                   | 83    | 83        | 44                                       | 4            | 2                    | 13    | 52        |
|                 | Educational services                    | 150                     | 148          | 148                  | 148   | 148       | 47                                       | --           | 3                    | 67    | 102       |
|                 | Sports and recreation                   | 26                      | 26           | 26                   | 26    | 26        | 9  | 1            | 3                    | 7     | 13        |
|                 | Accommodation                           | 21                      | 22           | 22                   | 22    | 21        | 9  | --           | 1                    | 5     | 12        |
|                 | Repair and maintenance services         | 160                     | 160          | 160                  | 160   | 160       | 73                                       | 2            | 5                    | 35    | 96        |
|                 | Cemeteries and crematories              | 7                       | 7            | 7                    | 7     | 7         | 3  | --           | --                   | 2     | 4         |
|                 | Total                                   | 874                     | 866          | 866                  | 864   | 864       | 344                                      | 12           | 23                   | 179   | 464       |

<sup>a</sup> Only containers used for gas or 2-stroke fuel.

Table 3.3 Mean Container Capacity by Industry Category

|                                 | Mean                    |              |                      |       |           | Number of cases         |              |                      |       |           |
|---------------------------------|-------------------------|--------------|----------------------|-------|-----------|-------------------------|--------------|----------------------|-------|-----------|
|                                 | Spill-proof red plastic | Blue plastic | 5-gallon plastic jug | Metal | All types | Spill-proof red plastic | Blue plastic | 5-gallon plastic jug | Metal | All types |
| Crop production                 | 3.07                    | 3.00         | 5.00                 | 4.36  | 3.89      | 22                      | 3            | 3                    | 23    | 36        |
| Animal production               | 3.24                    | --           | 5.00                 | 2.54  | 3.29      | 13                      | 0            | 1                    | 4     | 16        |
| Forestry and logging            | 3.96                    | --           | --                   | 5.00  | 4.13      | 2                       | 0            | 0                    | 1     | 2         |
| Construction                    | 3.75                    | --           | 5.00                 | 5.00  | 3.93      | 100                     | 0            | 4                    | 15    | 104       |
| Retail                          | 3.06                    | 3.00         | 5.00                 | 4.31  | 3.26      | 8                       | 1            | 1                    | 1     | 9         |
| Towing                          | 4.10                    | 5.00         | --                   | 4.81  | 4.34      | 14                      | 1            | 0                    | 6     | 17        |
| Landscaping                     | 3.15                    | 3.72         | 5.00                 | 3.30  | 3.23      | 44                      | 4            | 2                    | 13    | 52        |
| Educational services            | 3.22                    | --           | 5.00                 | 3.49  | 3.46      | 47                      | 0            | 3                    | 67    | 102       |
| Sports and recreation           | 2.61                    | 5.00         | 5.00                 | 4.12  | 3.22      | 9                       | 1            | 3                    | 7     | 13        |
| Accommodation                   | 3.25                    | --           | 5.00                 | 4.55  | 3.81      | 9                       | 0            | 1                    | 5     | 12        |
| Repair and maintenance services | 3.42                    | 5.00         | 5.00                 | 4.02  | 3.57      | 73                      | 2            | 5                    | 33    | 96        |
| Cemeteries and crematories      | 4.04                    | --           | --                   | 4.80  | 4.48      | 3                       | 0            | -0                   | 2     | 4         |
| Total                           | 3.43                    | 3.97         | 5.00                 | 3.93  | 3.63      | 344                     | 12           | 23                   | 176   | 464       |

Table 3.4 Mean Number of Refills per Container per Day by Industry Category

|                    |                                 | Spill-proof<br>red plastic | Blue<br>plastic | 5-gallon<br>plastic jug | Metal | All types |
|--------------------|---------------------------------|----------------------------|-----------------|-------------------------|-------|-----------|
| Mean               | Crop production                 | .06                        | .16             | .10                     | .03   | .06       |
|                    | Animal production               | .10                        | --              | .03                     | .03   | .09       |
|                    | Forestry and logging            | .24                        | --              | --                      | .02   | .18       |
|                    | Construction                    | .08                        | --              | .03                     | .12   | .07       |
|                    | Retail                          | .09                        | .12             | 2.99                    | .21   | .18       |
|                    | Towing                          | 1.24                       | .24             | .43                     | .30   | 1.06      |
|                    | Landscaping                     | .24                        | .04             | .04                     | .09   | .21       |
|                    | Educational services            | .11                        | --              | .71                     | .25   | .20       |
|                    | Sports and recreation           | .33                        | .71             | 1.08                    | .18   | .33       |
|                    | Accommodation                   | .09                        | --              | .03                     | .05   | .07       |
|                    | Repair and maintenance services | .08                        | .03             | .57                     | .06   | .07       |
|                    | Cemeteries and crematories      | .24                        | --              | --                      | .34   | .21       |
|                    | Total                           | .16                        | .16             | .45                     | .15   | .16       |
| Number<br>of cases | Crop production                 | 22                         | 3               | 3                       | 22    | 35        |
|                    | Animal production               | 12                         | --              | 1                       | 4     | 15        |
|                    | Forestry and logging            | 2                          | --              | --                      | 1     | 2         |
|                    | Construction                    | 100                        | --              | 4                       | 15    | 104       |
|                    | Retail                          | 8                          | 1               | 1                       | 1     | 9         |
|                    | Towing                          | 13                         | 1               | 0                       | 5     | 15        |
|                    | Landscaping                     | 43                         | 4               | 2                       | 13    | 51        |
|                    | Educational services            | 44                         | --              | 3                       | 67    | 99        |
|                    | Sports and recreation           | 9                          | 1               | 3                       | 7     | 13        |
|                    | Accommodation                   | 9                          | --              | 1                       | 5     | 12        |
|                    | Repair and maintenance services | 70                         | 2               | 2                       | 33    | 91        |
|                    | Cemeteries and crematories      | 3                          | --              | --                      | 2     | 4         |
|                    | Total                           | 335                        | 12              | 21                      | 174   | 450       |

Table 3.5 Frequency of Container Use by Industry Category

|                                 | Daily  | Several<br>times a<br>week | About<br>once a<br>week | Several<br>times a<br>month | About<br>once a<br>month | Less<br>than<br>once a<br>month | Total  | Number<br>of cases |
|---------------------------------|--------|----------------------------|-------------------------|-----------------------------|--------------------------|---------------------------------|--------|--------------------|
| Crop production                 | 22.7%  | 31.8%                      | 9.1%                    | 13.6%                       | 13.6%                    | 9.1%                            | 100.0% | 22                 |
| Animal production               | 7.7%   | 15.4%                      | 7.7%                    | 7.7%                        | 7.7%                     | 53.8%                           | 100.0% | 13                 |
| Forestry and logging            | .0%    | 50.0%                      | .0%                     | 50.0%                       | .0%                      | .0%                             | 100.0% | 2                  |
| Construction                    | 10.4%  | 18.8%                      | 4.2%                    | 19.8%                       | 35.4%                    | 11.5%                           | 100.0% | 96                 |
| Retail                          | .0%    | 22.2%                      | 33.3%                   | .0%                         | 11.1%                    | 33.3%                           | 100.0% | 9                  |
| Towing                          | 30.8%  | 15.4%                      | 23.1%                   | 15.4%                       | .0%                      | 15.4%                           | 100.0% | 13                 |
| Landscaping                     | 67.4%  | 16.3%                      | 7.0%                    | 2.3%                        | 2.3%                     | 4.7%                            | 100.0% | 43                 |
| Educational services            | 35.8%  | 29.9%                      | .0%                     | 10.4%                       | 4.5%                     | 19.4%                           | 100.0% | 67                 |
| Sports and recreation           | 55.6%  | 22.2%                      | .0%                     | .0%                         | 22.2%                    | .0%                             | 100.0% | 9                  |
| Accommodation                   | 20.0%  | 20.0%                      | 30.0%                   | 20.0%                       | .0%                      | 10.0%                           | 100.0% | 10                 |
| Repair and maintenance services | 2.8%   | 12.5%                      | 2.8%                    | 33.3%                       | 9.7%                     | 38.9%                           | 100.0% | 72                 |
| Cemeteries and crematories      | 100.0% | .0%                        | .0%                     | .0%                         | .0%                      | .0%                             | 100.0% | 2                  |
| Total                           | 23.5%  | 20.1%                      | 5.9%                    | 16.8%                       | 14.5%                    | 19.3%                           | 100.0% | 358                |



Table 3.6 Percent of Businesses Reporting Problems with New Spouts by Industry Category

|                                 | Percent of businesses reporting problems: |          |             |                 |                    | <i>Number of cases</i> |
|---------------------------------|---|----------|-------------|-----------------|--------------------|------------------------|
|                                 | Filling equipment                         | Spillage | Spout broke | Container broke | Modified container |                        |
| Crop production                 | 38.1%                                     | 9.1%     | .0%         | 9.1%            | 9.1%               | 21-22                  |
| Animal production               | 50.0%                                     | 33.3%    | .0%         | .0%             | 33.3%              | 12                     |
| Forestry and logging            | 100.0%                                    | 100.0%   | .0%         | .0%             | .0%                | 1-2                    |
| Construction                    | 5.0%                                      | 14.0%    | .0%         | 6.3%            | 10.6%              | 94-101                 |
| Retail                          | 37.5%                                     | 62.5%    | 11.1%       | 11.1%           | 12.5%              | 8-9                    |
| Towing                          | 30.8%                                     | 41.7%    | 7.7%        | 7.7%            | 23.1%              | 12-13                  |
| Landscaping                     | 22.2%                                     | 13.6%    | 4.5%        | 6.8%            | 4.5%               | 44-45                  |
| Educational services            | 4.3%                                      | 4.3%     | 4.3%        | .0%             | 4.3%               | 47                     |
| Sports and recreation           | 55.6%                                     | 33.3%    | .0%         | .0%             | 11.1%              | 9                      |
| Accommodation                   | 20.0%                                     | 22.2%    | .0%         | .0%             | 11.1%              | 9-10                   |
| Repair and maintenance services | 15.1%                                     | 16.4%    | 9.6%        | .0%             | 6.8%               | 73                     |
| Cemeteries and crematories      | .0%                                       | .0%      | .0%         | .0%             | .0%                | 3                      |
| Total                           | 16.6%                                     | 16.5%    | 3.8%        | 3.8%            | 9.3%               | 335-343                |

#### Section 4: Estimates and Summary of Survey Responses by Region

Table 4.1 Commercial Portable Fuel Container Ownership by Region

|  |       | Percent         |                    |           | Number of cases |                    |           |
|--|-------|-----------------|--------------------|-----------|-----------------|--------------------|-----------|
| Does your business own:  |       | South Coast AQD | Remainder of state | Statewide | South Coast AQD | Remainder of state | Statewide |
| A red plastic gas can with one of the new spill-proof spouts?                        | Yes   | 36.1%           | 41.0%              | 39.4%     | 106             | 238                | 344       |
|  | No    | 63.9%           | 59.0%              | 60.6%     | 188             | 342                | 530       |
|  | Total | 100.0%          | 100.0%             | 100.0%    | 294             | 580                | 874       |
| A blue plastic gasoline or kerosene can?   | Yes   | 1.0%            | 2.8%               | 2.2%      | 3               | 16                 | 19        |
|  | No    | 99.0%           | 97.2%              | 97.8%     | 283             | 563                | 846       |
|  | Total | 100.0%          | 100.0%             | 100.0%    | 286             | 579                | 865       |
| A large plastic 5-gallon jug like you might see used to fill a Jet Ski or dirt bike? | Yes   | 2.1%            | 4.8%               | 3.9%      | 6               | 28                 | 34        |
|  | No    | 97.9%           | 95.2%              | 96.1%     | 280             | 551                | 831       |
|  | Total | 100.0%          | 100.0%             | 100.0%    | 286             | 579                | 865       |
| A metal gas can?   | Yes   | 19.2%           | 21.5%              | 20.7%     | 55              | 124                | 179       |
|  | No    | 80.8%           | 78.5%              | 79.3%     | 231             | 454                | 685       |
|  | Total | 100.0%          | 100.0%             | 100.0%    | 286             | 578                | 864       |
| Any portable fuel containers (computed based on responses to above)                  | Yes   | 48.3%           | 55.9%              | 53.4%     | 142             | 325                | 467       |
|  | No    | 51.7%           | 44.1%              | 46.6%     | 152             | 256                | 408       |
|  | Total | 100.0%          | 100.0%             | 100.0%    | 294             | 581                | 875       |

Table 4.2 Estimated Number of Businesses Owning Portable Fuel Containers by Region

|  |                         | South Coast AQD | Remainder of State | Statewide |
|--|-------------------------|-----------------|--------------------|-----------|
| Number of businesses <sup>a</sup>          |                         | 28,747          | 53,180             | 81,927    |
| Percent of businesses who own PFC          | Spill-proof red plastic | 36.05%          | 41.03%             | 39.36%    |
|  | Blue plastic            | 1.05%           | 2.76%              | 2.20%     |
|  | 5-gallon plastic jug    | 2.10%           | 4.84%              | 3.93%     |
|  | Metal                   | 19.23%          | 21.45%             | 20.72%    |
|  | Any type of PFC         | 48.30%          | 55.94%             | 53.37%    |
| Estimated number of businesses who own PFC | Spill-proof red plastic | 10,363          | 21,820             | 32,246    |
|  | Blue plastic            | 302             | 1,468              | 1,802     |
|  | 5-gallon plastic jug    | 604             | 2,574              | 3,220     |
|  | Metal                   | 5,528           | 11,407             | 16,975    |
|  | Any type of PFC         | 13,885          | 29,749             | 43,724    |

<sup>a</sup> Source: January 2005 Dun & Bradstreet business database for 53 selected NAICS codes.

Table 4.3 Mean Number of Portable Fuel Containers per Business by Region

|                        |                                    |                         | All businesses  |                    |           | Only businesses who own that type of PFC |                    |           |
|------------------------|------------------------------------|-------------------------|-----------------|--------------------|-----------|--|--------------------|-----------|
|                        |                                    |                         | South Coast AQD | Remainder of state | Statewide | South Coast AQD                          | Remainder of state | Statewide |
| Mean                   | All PFCs                           | Spill-proof red plastic | 1.48            | 1.24               | 1.32      | 4.10                                     | 3.02               | 3.36      |
|                        |                                    | Blue plastic            | .04             | .06                | .05       | 3.34                                     | 2.18               | 2.37      |
|                        |                                    | 5-gallon plastic jug    | .19             | .12                | .14       | 8.54                                     | 2.45               | 3.56      |
|                        |                                    | Metal                   | 1.24            | 1.21               | 1.22      | 6.51                                     | 5.64               | 5.91      |
|                        |                                    | Any type of PFC         | 2.94            | 2.63               | 2.73      | 6.22                                     | 4.72               | 5.16      |
|                        | PFCs used for gas or 2-stroke fuel | Spill-proof red plastic | 1.48            | 1.24               | 1.32      | 4.10                                     | 3.02               | 3.36      |
|                        |                                    | Blue plastic            | .04             | .04                | .04       | 3.68                                     | 2.32               | 2.63      |
|                        |                                    | 5-gallon plastic jug    | .17             | .08                | .11       | 9.48                                     | 2.56               | 4.08      |
|                        |                                    | Metal                   | 1.24            | 1.21               | 1.22      | 6.51                                     | 5.64               | 5.91      |
|                        |                                    | Any type of PFC         | 2.92            | 2.55               | 2.67      | 6.22                                     | 4.60               | 5.08      |
| Standard error of mean | All PFCs                           | Spill-proof red plastic | .23             | .11                | .11       | .56                                      | .21                | .23       |
|                        |                                    | Blue plastic            | .03             | .02                | .02       | 1.70                                     | .53                | .51       |
|                        |                                    | 5-gallon plastic jug    | .08             | .03                | .03       | 1.41                                     | .30                | .53       |
|                        |                                    | Metal                   | .26             | .32                | .23       | 1.11                                     | 1.42               | 1.04      |
|                        |                                    | Any type of PFC         | .40             | .34                | .26       | .75                                      | .59                | .47       |
|                        | PFCs used for gas or 2-stroke fuel | Spill-proof red plastic | .23             | .11                | .11       | .56                                      | .21                | .23       |
|                        |                                    | Blue plastic            | .03             | .02                | .02       | 1.88                                     | .95                | .82       |
|                        |                                    | 5-gallon plastic jug    | .08             | .02                | .03       | 1.42                                     | .42                | .75       |
|                        |                                    | Metal                   | .26             | .32                | .23       | 1.11                                     | 1.42               | 1.04      |
|                        |                                    | Any type of PFC         | .40             | .34                | .26       | .75                                      | .59                | .47       |
| Number of cases        | All PFCs                           | Spill-proof red plastic | 294             | 580                | 874       | 106                                      | 238                | 344       |
|                        |                                    | Blue plastic            | 286             | 580                | 866       | 3  | 16                 | 20        |
|                        |                                    | 5-gallon plastic jug    | 286             | 580                | 866       | 6  | 28                 | 34        |
|                        |                                    | Metal                   | 286             | 579                | 864       | 55                                       | 124                | 179       |
|                        |                                    | Any type of PFC         | 286             | 578                | 864       | 135                                      | 322                | 457       |
|                        | PFCs used for gas or 2-stroke fuel | Spill-proof red plastic | 294             | 580                | 874       | 106                                      | 238                | 344       |
|                        |                                    | Blue plastic            | 286             | 580                | 866       | 3  | 9                  | 12        |
|                        |                                    | 5-gallon plastic jug    | 286             | 580                | 866       | 5  | 18                 | 23        |
|                        |                                    | Metal                   | 286             | 579                | 864       | 55                                       | 124                | 179       |
|                        |                                    | Any type of PFC         | 286             | 578                | 864       | 134                                      | 320                | 454       |

Table 4.4 Confidence Intervals<sup>a</sup> for Mean Number of Portable Fuel Containers per Business by Region

|                                    |                         | All businesses  |                    |             | Only businesses who won that type of PFC |                    |             |
|------------------------------------|-------------------------|-----------------|--------------------|-------------|--|--------------------|-------------|
|                                    |                         | South Coast AQD | Remainder of state | Statewide   | South Coast AQD                          | Remainder of state | Statewide   |
| All PFCs                           | Spill-proof red plastic | 1.03 - 1.94     | 1.03 - 1.45        | 1.12 - 1.53 | 3.01 - 5.20                              | 2.61 - 3.44        | 2.91 - 3.80 |
|                                    | Blue plastic            | .00 - .09       | .02 - .10          | .02 - .09   | .00 - 6.67                               | 1.14 - 3.23        | 1.36 - 3.37 |
|                                    | 5-gallon plastic jug    | .03 - .34       | .07 - .17          | .08 - .20   | 5.77 - 11.30                             | 1.87 - 3.03        | 2.52 - 4.59 |
|                                    | Metal                   | .74 - 1.75      | .59 - 1.84         | .77 - 1.67  | 4.35 - 8.68                              | 2.86 - 8.42        | 3.87 - 7.95 |
|                                    | Any type of PFC         | 2.16 - 3.72     | 1.96 - 3.30        | 2.21 - 3.25 | 4.75 - 7.69                              | 3.56 - 5.87        | 4.24 - 6.08 |
| PFCs used for gas or 2-stroke fuel | Spill-proof red plastic | 1.03 - 1.94     | 1.03 - 1.45        | 1.12 - 1.53 | 3.01 - 5.20                              | 2.61 - 3.44        | 2.91 - 3.80 |
|                                    | Blue plastic            | .00 - .09       | .00 - .07          | .01 - .07   | .00 - 7.37                               | .46 - 4.18         | 1.01 - 4.25 |
|                                    | 5-gallon plastic jug    | .02 - .32       | .04 - .12          | .05 - .17   | 6.70 - 12.26                             | 1.74 - 3.38        | 2.62 - 5.54 |
|                                    | Metal                   | .74 - 1.75      | .59 - 1.84         | .77 - 1.67  | 4.35 - 8.68                              | 2.86 - 8.42        | 3.87 - 7.95 |
|                                    | Any type of PFC         | 2.14 - 3.70     | 1.88 - 3.21        | 2.15 - 3.18 | 4.74 - 7.70                              | 3.44 - 5.76        | 4.15 - 6.00 |

<sup>a</sup> Estimate with 95% confidence that the mean for the population is within these intervals.

Table 4.5 Estimated Number of Commercial Portable Fuel Containers by Region

|                                    |                         | South Coast AQD | Remainder of State | Total Statewide |
|------------------------------------|-------------------------|-----------------|--------------------|-----------------|
| All PFCs                           | Spill-proof red plastic | 42,546          | 65,943             | 108,489         |
|                                    | Blue plastic            | 1,150           | 3,191              | 4,341           |
|                                    | 5-gallon plastic jug    | 5,462           | 6,382              | 11,844          |
|                                    | Metal                   | 35,646          | 64,348             | 99,994          |
|                                    | Total                   | 84,804          | 139,864            | 224,668         |
| PFCs used for gas or 2-stroke fuel | Spill-proof red plastic | 42,546          | 65,943             | 108,489         |
|                                    | Blue plastic            | 1,150           | 2,127              | 3,277           |
|                                    | 5-gallon plastic jug    | 4,887           | 4,254              | 9,141           |
|                                    | Metal                   | 35,646          | 64,348             | 99,994          |
|                                    | Total                   | 84,229          | 136,672            | 220,901         |

Table 4.6 Confidence Intervals<sup>a</sup> for Estimated Number of Commercial Portable Fuel Containers by Region

|                                    |                         | South Coast AQD |           | Remainder of State |           | Total Statewide |           |
|------------------------------------|-------------------------|-----------------|-----------|--------------------|-----------|-----------------|-----------|
| All PFCs                           | Spill-proof red plastic | 29,578          | - 55,776  | 54,873             | - 77,047  | 84,451          | - 132,823 |
|                                    | Blue plastic            | 0               | - 2,513   | 1,103              | - 5,496   | 1,103           | - 8,009   |
|                                    | 5-gallon plastic jug    | 912             | - 9,850   | 3,627              | - 9,068   | 4,539           | - 18,918  |
|                                    | Metal                   | 21,168          | - 50,304  | 31,233             | - 97,644  | 52,401          | - 147,948 |
|                                    | Total                   | 51,261          | - 118,443 | 90,836             | - 189,255 | 142,097         | - 307,698 |
| PFCs used for gas or 2-stroke fuel | Spill-proof red plastic | 29,578          | - 55,776  | 54,873             | - 77,047  | 84,451          | - 132,823 |
|                                    | Blue plastic            | 0               | - 2,467   | 20                 | - 3,955   | 20              | - 6,422   |
|                                    | 5-gallon plastic jug    | 466             | - 9,194   | 1,910              | - 6,590   | 2,376           | - 15,784  |
|                                    | Metal                   | 21,168          | - 50,304  | 31,233             | - 97,644  | 52,401          | - 147,948 |
|                                    | Total                   | 50,779          | - 117,741 | 88,036             | - 185,236 | 138,815         | - 302,977 |

<sup>a</sup> Estimate with 95% confidence that the value for the population is within these intervals.

Table 4.7 Mean Container Capacity by Region

|                         | Mean            |                    |           | Number of cases |                    |           |
|-------------------------|-----------------|--------------------|-----------|-----------------|--------------------|-----------|
|                         | South Coast AQD | Remainder of State | Statewide | South Coast AQD | Remainder of State | Statewide |
| Spill-proof red plastic | 3.80            | 3.26               | 3.43      | 106             | 238                | 344       |
| Blue plastic            | 5.00            | 3.67               | 3.97      | 3               | 9                  | 12        |
| 5-gallon plastic jug    | 5.00            | 5.00               | 5.00      | 5               | 18                 | 23        |
| Metal                   | 4.14            | 3.83               | 3.93      | 55              | 122                | 176       |
| All types               | 3.93            | 3.51               | 3.63      | 141             | 323                | 464       |

Table 4.8 Mean Number of Refills per Container per Day by Region

|                         | Mean            |                    |           | Number of cases |                    |           |
|-------------------------|-----------------|--------------------|-----------|-----------------|--------------------|-----------|
|                         | South Coast AQD | Remainder of State | Statewide | South Coast AQD | Remainder of State | Statewide |
| Spill-proof red plastic | .18             | .15                | .16       | 103             | 232                | 335       |
| Blue plastic            | .33             | .10                | .16       | 3               | 9                  | 12        |
| 5-gallon plastic jug    | .63             | .40                | .45       | 5               | 16                 | 21        |
| Metal                   | .15             | .15                | .15       | 55              | 119                | 174       |

|           |     |     |     |     |     |     |
|-----------|-----|-----|-----|-----|-----|-----|
| All types | .17 | .15 | .16 | 138 | 312 | 450 |
|-----------|-----|-----|-----|-----|-----|-----|

2004 PORTABLE FUEL CONTAINER COMMERCIAL SURVEY

Hello, my name is \_\_\_\_\_. I'm calling from Sacramento State University on behalf of the California Air Resources Board. We are conducting a statewide survey on gas cans. The information we collect will be used to improve gas cans and reduce air pollution. Can you put me in touch with the person who is most familiar with the gas cans your business uses?

- 1 Continue with interview
- 2 Business does not use any kind of portable fuel container (**skip to Q27**)
- 3 Appropriate respondent is not at this number, change contact information

*Note to interviewers: Anything larger than 5-gallons is not a portable fuel container and should not be included in this survey.*

---

1. Does your business own a RED PLASTIC gas can with one of the new spill proof spring-loaded spouts?

- 1 Yes (**skip to Q5**)
- 2 No (**skip to Q13**)
- 3 Have a red plastic gas can, not sure if has a spill-proof spout
- 4 Don't know whether they have a red plastic gas can (**skip to Q13**)

*Note to interviewers: The new spouts are spring-loaded and close automatically when not in use, the same way gas station nozzles will not dispense gas unless they are inserted into your gas tank. The new containers also do not have vent holes. The new gas cans came out around 2001, so if respondent is not sure, probe for when they bought the can.*

2. Was the red plastic gas can purchased within the last 3 years?

- 1 Yes
- 2 No (**skip to Q13**)
- 3 Don't know (**skip to Q4**)

3. Do you know what brand the container is? (read brands if necessary)

- 1 Yes, one of the following: Blitz, Chilton, Midwest Can, No-spill, Sceptor or Wedco (**skip to Q5**)
- 2 No, don't know what brand the container is

4. Would it be ok if someone from the Air Resources Board contacted you directly to help determine whether your gas can has one of the new spill-proof spouts?

- 1 Yes, ok for ARB to call \_\_\_\_\_
- 2 No, prefer that ARB did not call

5. How many of these containers does your business own? \_\_\_\_\_

6. a) How many are 1-gallon containers? \_\_\_\_\_

- b) How many are 2-gallon containers? \_\_\_\_\_  
(includes 2.5 gallons)

- c) How many are 5-gallon containers? \_\_\_\_\_

7. How often do you refill the:

- a) 1 gallon container(s)

\_\_\_\_\_ times per:

- 1 day
- 2 week
- 3 month
- 4 year
- 5 other, write in: \_\_\_\_\_

- b) 2-gallon container(s)

\_\_\_\_\_ times per:

- 1 day
- 2 week
- 3 month
- 4 year
- 5 other, write in: \_\_\_\_\_

- c) 5-gallon container(s)

\_\_\_\_\_ times per:

- 1 day
- 2 week
- 3 month
- 4 year
- 5 other, write in: \_\_\_\_\_

8. Have you or your co-workers experienced any problems filling equipment using the new spouts?

- 1 Yes
- 2 No

9. Have you (or your co-workers) had any problems with spillage?

- 1 Yes
- 2 No

10. Have you (or your co-workers) ever had any problems with the container or the spout breaking?  
1 Yes, spout broke  
2 Yes, container broke  
3 Yes, both spout and container broke  
4 No, no breakage
11. Have you (or your co-workers) ever had to modify the container to make it work to your satisfaction?  
1 Yes  
2 No
12. Are there any comments you would like to make about the new RED PLASTIC gas cans?
- 

13. Does your business own any BLUE PLASTIC gasoline or kerosene cans?  
1 Yes  
2 No (**skip to Q18**)  
3 Don't know (**skip to Q18**)

*Note to interviewers: Only code yes if the can is blue and plastic.*

14. How many of these containers does your business own? \_\_\_\_\_
15. How many of these containers are used for gasoline? \_\_\_\_\_ (**if 0, skip to Q18**)
16. a) How many are 1-gallon containers? \_\_\_\_\_  
b) How many are 2-gallon containers? \_\_\_\_\_  
(includes 2.5 gallons)  
c) How many are 5-gallon containers? \_\_\_\_\_
17. How often do you refill the:
- |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|
| a) 1 gallon container(s) | b) 2-gallon container(s) | c) 5-gallon container(s) |
| _____ times per:         | _____ times per:         | _____ times per:         |
| 1 day                    | 1 day                    | 1 day                    |
| 2 week                   | 2 week                   | 2 week                   |
| 3 month                  | 3 month                  | 3 month                  |
| 4 year                   | 4 year                   | 4 year                   |
| 5 other, write in: _____ | 5 other, write in: _____ | 5 other, write in: _____ |
- 

18. Does your business own any large plastic 5-gallon jugs like you might see used to fill a Jet Ski or dirt bike? They might have a short hose installed in the cap for pouring and some people call them jerry or utility jugs.  
1 Yes  
2 No (skip to Q22)  
3 Have a plastic fuel container, but not sure if it's a "Jerry Jug"  
4 Don't know whether have a 5-gallon plastic fuel container (**skip to Q22**)
19. How many of these containers does your business own? \_\_\_\_\_
20. How many of these containers are used for gasoline or 2-stroke fuel? \_\_\_\_\_ (**if 0, skip to Q22**)
21. How often do you refill the container(s):  
\_\_\_\_\_ times per:  
1 day  
2 week  
3 month  
4 year  
5 other, write in: \_\_\_\_\_
-



22. Does your business own any metal gas cans?  
 1 Yes  
 2 No (**skip to Q26**)  
 3 Don't know (**skip to Q26**)
23. How many of these containers does your business own? \_\_\_\_\_
24. a) How many are 1-gallon containers? \_\_\_\_\_  
 b) How many are 2-gallon containers? \_\_\_\_\_  
 (includes 2.5 gallons)  
 c) How many are 5-gallon containers? \_\_\_\_\_
25. How often do you refill the:
- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| 1 gallon container(s) | 2-gallon container(s) | 5-gallon container(s) |
| _____ times per:      | _____ times per:      | _____ times per:      |
| 1 day                 | 1 day                 | 1 day                 |
| 2 week                | 2 week                | 2 week                |
| 3 month               | 3 month               | 3 month               |
| 4 year                | 4 year                | 4 year                |
| 5 other, write in:    | 5 other, write in:    | 5 other, write in:    |
| _____                 | _____                 | _____                 |

---

So far we've been talking about how many times you **refill** these containers. Now I need to find out how frequently you **use** them. (Note to interviewers: "using" a container means putting fuel in equipment).

26. Overall, how often would you say you (or your co-workers) use **any** of these kinds of gas cans?
- 1 Daily, about 5-7 times a week
  - 2 Several (2-4) times a week
  - 3 About once a week
  - 4 Several (2-3) times a month
  - 5 About once a month
  - 6 Less than once a month

*Note to interviewers: this includes all of the kinds of containers we've asked about -- new spill-proof red plastic, blue plastic, 5-gallon jug, and metal gas cans. "Use" means using the container to put gas in equipment.*

---

Now I just need to ask you few questions that will be used to make sure that the results of this study accurately represent the state of California as a whole.

27. What county (or counties) is your business located in? \_\_\_\_\_
28. How many employees does your business have?
- 1 Less than 10
  - 2 10-19
  - 3 20-49
  - 4 50-99
  - 5 100-249
  - 6 250-499
  - 7 500-999
  - 8 1000+
29. How many days per week does your business generally operate? \_\_\_\_\_
30. What is your job title? \_\_\_\_\_
31. Would you mind if someone from the Air Resources Board contacted you to talk more about specific issues or problems related to gas cans that your business may be experiencing?
- 1 Yes, ok for ARB to call \_\_\_\_\_
  - 2 No, prefer that ARB did not call.

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That is all the questions I have. Thank you for your time. If you are interested, you can visit the Air Resources Board online at: [www.arb.ca.gov/homepage.htm](http://www.arb.ca.gov/homepage.htm)